WHAT IS CLAIMED IS:

1. A noncoherent pulse position and phase shift keying (PPPSK) transmission system, comprising:

an information generation unit for generating information data;

a modulation unit for deciding a phase and a timing position corresponding to the generated information data; and

a wavelet generation unit for generating a pulse based on the decided phase and timing position, and generating a wavelet formed with the pulse carrying a wave corresponding to a center frequency of a transmission frequency band.

2. The noncoherent PPPSK transmission system as claimed in claim 1, wherein the modulation unit includes:

a series/parallel converter for separating the information data into phase information data and time information data;

a phase modulator for deciding a phase of the wavelet based on the phase information data; and

a position modulator for deciding a timing position of the wavelet based on the time information data.

3. The noncoherent PPPSK transmission system as claimed in claim 2, wherein the position modulator includes:

a delay part having at least one delay unit; and

a switching unit for selecting one of the at least one delay unit based on the time information data, the position modulator deciding a timing position of the wavelet based on a delay state of the selected delay unit.

4. The noncoherent PPPSK transmission system as claimed in claim 2, wherein the information data includes n bits, and includes the phase information data of m bits and the time information data of ℓ bits, where $n = m + \ell$, and n, m, and ℓ are natural numbers.

5. A signal processing method for a noncoherent pulse position and phase shift keying(PPPSK) transmission system, comprising steps of:

generating information data;

deciding a phase and a timing position corresponding to the generated information data; and

generating a pulse based on the decided phase and timing position, and generating a wavelet formed with the pulse carrying a wave corresponding to a center frequency of a transmission frequency band.

6. The signal processing method as claimed in claim 5, wherein the deciding step includes the steps of:

separating the information data into phase information data and time information data;

deciding a phase of the wavelet based on the phase information data; and

deciding a timing position of the wavelet based on the time information data.

7. The signal processing method as claimed in claim 6, wherein the wavelet timing position deciding step includes the steps of:

selecting at least one delay state based on the time information data; and

deciding a timing position of the wavelet based on the selected at least one delay state.

8. The signal processing method as claimed in claim 5, wherein the information data includes n bits, and includes the phase information data of m bits and the time information data of ℓ bits, where $n = m + \ell$, and n, m, and ℓ are natural numbers.

9. The signal processing method as claimed in claim 5, wherein the deciding step includes the steps of:

separating the information data into phase information data and time information data;

deciding a timing position of the wavelet based on the time information data; and

deciding a phase of the wavelet based on the phase information data.

10. The signal processing method as claimed in claim 5, wherein the deciding step includes the steps of:

separating the information data into phase information data and time information data; and

deciding a phase of the wavelet based on the phase information data and a timing position of the wavelet based on the time information data.

11. A noncoherent pulse position and phase shift keying(PPPSK) transmission system, comprising:

an information generation unit for generating information data;

a series/parallel converter for separating the information data into phase information data and time information data;

a phase modulator for deciding a phase of a modulated signal corresponding to the information data based on the phase information data;

a wavelet generation unit for generating a pulse based on the decided phase, and generating a wavelet formed with the pulse carrying a wave corresponding to a center frequency of a transmission frequency band; and

a position modulator for deciding a timing position of the wavelet based on the time information data.

12. The noncoherent PPPSK transmission system as claimed in claim 11, wherein the position modulator includes:

a delay part having at least one delay unit; and

a switching unit for selecting one of the at least one delay unit based on the time information data, the position modulator deciding a timing position of the wavelet based on a delay state of the selected delay unit.

13. The noncoherent PPPSK transmission system as claimed in claim 11, wherein the information data includes n bits, and includes the phase information data of m bits and the time information data of ℓ bits, where $n = m + \ell$, and n, m, and ℓ are natural numbers.

14. A signal processing method for a noncoherent pulse position and phase shift keying(PPPSK) transmission system, comprising steps of:

generating information data;

separating the information data into phase information data and time information data;

deciding a phase of a modulated signal corresponding to the information data based on the phase information data;

generating a pulse based on the decided phase, and generating a wavelet formed with the pulse carrying a wave corresponding to a center frequency of a transmission frequency band; and

deciding a timing position of the wavelet based on the time information data.

15. The signal processing method as claimed in claim 14, wherein the timing position deciding step includes the steps of:

selecting at least one delay state based on the time information data; and

deciding a timing position of the wavelet based on the selected at least one delay state.

16. The signal processing method as claimed in claim 14, wherein the information data includes n bits, and includes the phase information data of m bits and the time information data of ℓ bits, where $n = m + \ell$, and n, m, and ℓ are a natural numbers.

17. A noncoherent pulse position and phase shift keying(PPPSK) reception system, comprising:

a wavelet generation unit for generating a high-frequency component corresponding to a center frequency of a transmission frequency band;

an offset unit for offsetting a high frequency of a reception signal by using the generated high-frequency component;

a demodulation unit for generating at least one reference signal based on a previous signal previously received with respect to the reception signal from which the high-frequency component is offset, and mixing each of the at least one reference signal with the reception signal to output mixing results; and

a decision unit for deciding information data corresponding to the reception signal based on the mixing results.

18. The noncoherent PPPSK reception system as claimed in claim 17, wherein the demodulation unit includes:

a delay part having at least one delay unit for generating at least one reference signal based on the previous signal; and

a mixing part having at least one mixer for mixing the reception signal with each of the at least one reference signal.

19. The noncoherent PPPSK reception system as claimed in claim 17, wherein the decision unit decides time information data of the reception signal based on a same timing position of a reference signal of the at least one reference signal generated from the delay part as a timing position of the reception signal, compares a phase of the reference signal having the same timing position as the timing position of the reception signal with a phase of the reception signal and decides phase information data of the reception signal, and recovers the information data corresponding to the reception signal by using the time information data and the phase information data.

20. A signal processing method for a noncoherent pulse position and phase shift keying(PPPSK) reception system, comprising steps of:

generating a high-frequency component corresponding to a center frequency of a transmission frequency band;

offsetting a high frequency of a reception signal by using the generated high-frequency component;

generating at least one reference signal based on a previous signal precedingly received with respect to the reception signal from which the high-frequency component is offset, and mixing the reference signals and the reception signal to output a mixing result; and

deciding information data corresponding to the reception signal based on mixing results.

21. The signal processing method as claimed in claim 20, wherein the mixing step includes steps of:

generating at least one reference signal based on the previous signal; and

mixing the reception signal with each of the at least one reference signal.

22. The signal processing method as claimed in claim 20, wherein the deciding step decides time information data of the reception signal based on a same timing position of a reference signal of the generated reference signals as a timing position of the reception signal, compares a phase of the reference signal having the same timing position as the timing position of the reception signal with a phase of the reception signal and decides phase information data of the reception signal, and recovers the information data

corresponding to the reception signal by using the time information data and the phase information data.